AV-21D10/AV-21DM10
AV-2134EE/AV-21DTG2

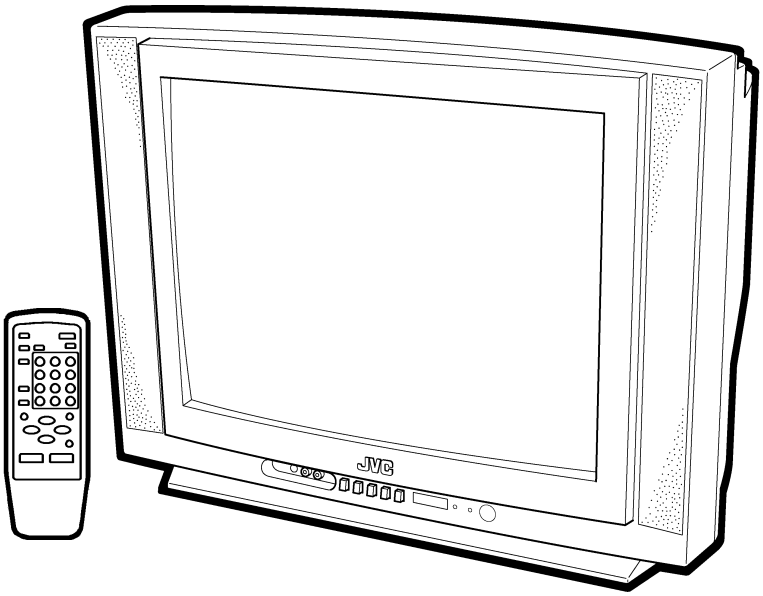
JVC

SERVICE MANUAL

COLOUR TELEVISION

BASIC CHASSIS
CG

AV-21D10 / AV-21D10/AU
AV-21DM10 / AV-21DM10/-A
AV-2134EE / AV-21DTG2/-A



CONTENTS

■ SPECIFICATIONS ····· 2
■ SAFETY PRECAUTIONS ····· 3
■ FEATURES ····· 4
■ FUNCTIONS ····· 5
■ MAIN DIFFERENCE LIST ····· 6
■ SPECIFIC SERVICE INSTRUCTIONS ····· 7
■ SERVICE ADJUSTMENTS ····· 14
■ PARTS LIST ····· 31
★ OPERATING INSTRUCTIONS
★ STANDARD CIRCUIT DIAGRAM ····· 2-1

COPYRIGHT © 2001 VICTOR COMPANY OF JAPAN, LTD.

No. 51858
Oct. 2001

REPLACEMENT OF MEMORY ICs

1. MEMORY ICs

This model uses memory ICs. This memory IC data are for proper operation of the video and deflection circuits.
When replacing memory ICs, be sure to use ICs written with the initial values of data.

2. PROCEDURE FOR REPLACING MEMORY ICs

(1) Power off

Switch the power off and disconnect the power plug from the wall outlet.

(2) Replace ICs

Be sure to use memory ICs written with the initial data values.

(3) Power on

Connect the power plug into the wall outlet and switch the power on.

(4) Check and set SYSTEM CONSTANT SET

・It must not adjust without adjustment signals.

1) Press the **DISPLAY** key and the **PICTURE MODE** key of the REMOTE CONTROL UNIT simultaneously.
2) The SERVICE MENU screen of Fig. 1 will be displayed.
3) While the SERVICE MENU is displayed, again press the **DISPLAY** key and **PICTURE MODE** key simultaneously, and the SYSTEM CONSTANT SET screen of Fig. 2 will be displayed.
1) Check the setting values of the SYSTEM CONSTANT SET of Table 1 If the value is different, select the setting item with the **MENU** ▼/▲key, and set the correct value with the **MENU** - / + key.
5) Press the **DISPLAY** key twice, and return to the normal screen.

(5) Receive channel of setting

Refer to the **OPERATING INSTRUCTIONS** and set the receive channels (channels preset) as described

(6) User Setting

Check the user setting value of Table 2, and if setting value is different, set the correct value.

For setting, refer to the **OPERATING INSTRUCTIONS**.

(7) Setting of SERVICE MENU

Verify the setting items of the SERVICE MENU of Table 3, and reset where necessary.

For setting, refer to the **SERVICE ADJUSTMENTS**.

NOTE

Both **MENU -/+ Key and MENU** ◀/▶key have the same functions.

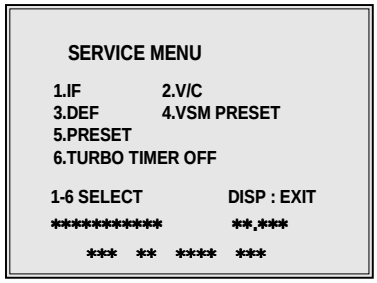


Fig.1

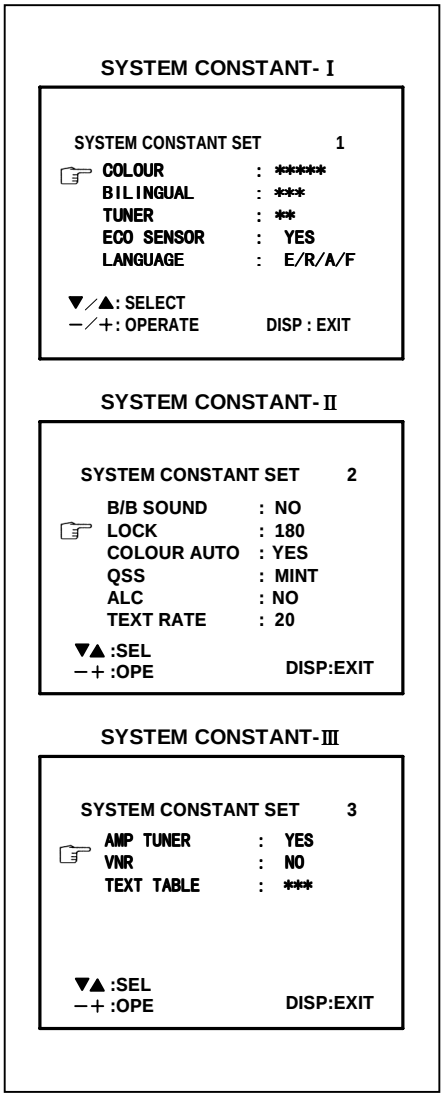
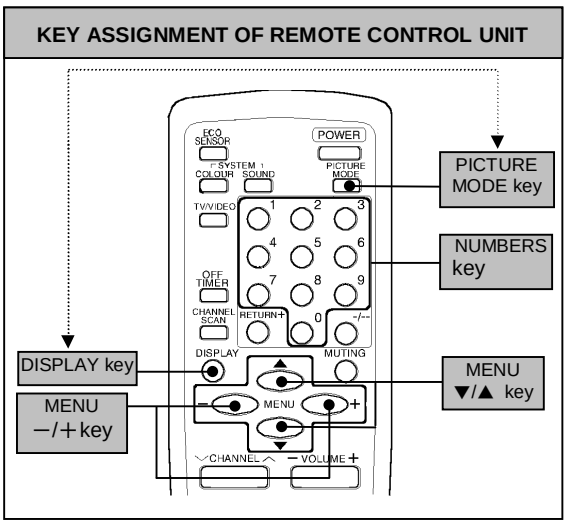


Fig.2



SETTING OF SYSTEM CONSTANT SET

Setting item	Setting contents	Mode					
		AV-21D10	AV-21D10/AU	AV-21DM10	AV-2134EE	AV-21DTG2/-A	AV-21DM10/-A
COLOUR	MULTI. → TRIPLE → PAL	TRIPLE	←	MULTI	TRIPLE	←	MULTI
BILINGUAL	YES → NO	NO	←	←	←	←	←
TUNER	MU→MA	MU	←	←	←	←	←
ECO SENSOR	YES → NO	YES	←	←	←	←	←
LANGUAGE	E/A/R/F→E/R/C→E/R/U→E/F	E/R/C	E/A/F/R	E/A/R/F	E/R/U	E/A/R/F	←
B/B SOUND	ON → OFF	OFF	←	←	←	NO	NO
LOCK	YES ↔ 10 ↔ 20 ↔ ～ ↔ 230 ↔ 240 ↔ 250	180	←	←	←	←	←
COLOUR AUTO	YES → NO	NO	←	←	←	YES	←
QSS	MINT →MQSS	MINT	←	←	←	←	←
ALC	YES → NO	NO	←	←	←	←	←
TEXT RATE	10 ↔ 20 ↔ 40 ↔ 80	20	←	←	←	←	←
AMP TUNER	YES → NO	NO	←	←	←	←	←
VNR	YES → NO	YES	←	←	←	←	←
TEXT TABLE	ARA → CYL	CYL	←	←	←	←	←

Table 1

USER SETTING VALUES

Setting item	Setting value	Setting item	Setting value
MAIN POWER SW	OFF	PICTURE MODE (VSM)	BRIGHT
SUB POWER	ON	LANGUAGE	ENGLISH (ENG)
CHANNEL POSITION	1 POSITION	CHANNEL PRESET	Refer to OPERATING INSTRUCTION
VOLUME	About 10	ECO SENSOR	OFF
TV/VIDEO	TV	VNR	OFF
ON SCREEN DISPLAY	POSITION INDICATION	AUTO SHUTOFF	OFF
COLOUR SYSTEM	AUTO PAL	ON TIMER	PR1 0:00
SOUND SYSTEM	B / G	BLUE BACK	OFF
OFF TIMER	OFF (shown : 00)	CHILD LOCK	OFF

Table 2

INITIAL SETTING VALUE OF SERVICE MENU

1. **Adjustment of the SERVICE MENU is made on the basis of the initial setting values ; however, the new setting values which set the screen in its optimum condition may differ from the initial setting.**
2. **Do not change the initial Setting Values of the Setting (Adjustment) items not listed In "ADJUSTMENT".**

2. V/C

Setting item \ Colour system		Variable range	Initial setting value			
			PAL	SECAM	NTSC 3.58	NTSC 4.43
1. CUT OFF	RED	-128～+127	-50	←	←	←
	GREEN					
	BLUE					
2. DRIVE	RED	-128～+127	+ 0	←	←	←
	BLUE					
3. BRIGHT		-127～+127	+ 0	←	←	←
4. CONT.		-63～+63	+ 0	←	←	←
5. COLOUR		-63～+63	+ 0	←	←	←
6. TINT	TV	-63～+63	——	——	+ 0	+ 0
	VIDEO		——	——	+ 8	+ 0
7. SECAM BL ADJ.		-31～+31	+ 0	←	←	←
8. SHARP(Do Not Adj.)	TV	-32～+31	- 8(Fixed)	←	←	←
	VIDEO		+15(Fixed)			

3. DEFLECTION

Setting item	Variable range	Initial setting value	
		fv : 50Hz MODE	fv : 60Hz MODE
1. VER. POSITION	-04 ～ +03	- 1	- 3
2. HOR. POSITION	-16 ～ +15	+ 3	+ 3
3. VER. HEIGHT	-64 ～ +63	+35	+ 1
4. VER. LINEARITY	-32 ～ +31	+15	- 1
5. VER. SCURVE	-32 ～ +31	+32	+ 0
6. HOR. VCO ADJUST	-63 ～ +62	+ 0	+ 0

4. VSM PRESET

VSM mode \ VSM preset / Setting item	BRIGHT	STANDARD	SOFT
TINT SETTING VALUE	+15	←	←
COLOUR SETTING VALUE	+15	←	←
BRIGHT SETTING VALUE	+15	←	←
CONT. SETTING VALUE	+30	+15	+11
SHARP SETTING VALUE	+15	←	+12

5. PRESET

The items in the following table, it is no requirement for adjustment.
If values had changed by the miss operation, set the initial setting values in the following table.

Colour System (Do Not Adjust)

Setting item		Initial setting value (Fixed value)			
		PAL	SECAM	NTSC 3.58	NTSC 4.43
1. C TRAP FIX		1	1	1	1
2. SHARP PEAK		0	0	0	0
3. ABL		1	1	1	1
4. GAMMA		0	0	0	0
5. Y. DELAY TIME	TV	0	2	2	3
	VIDEO	0	2	0	2
6. BLACK EXP START		+3	+3	+3	+3
7. C-BPF	TV	1	1	0	0
	VIDEO	1	1	1	1
8. CW / SCP		0	0	0	0
9. VIF DET LEVEL		0	0	0	0
11. IF AGC MIN		0	0	0	0
12. VIF AGC		0	0	0	0
13. VIF PMOD		0	0	0	0
19. VNR		15	15	15	15
20. RGB LIM		1	1	1	1
21. RGB LIMIT LEVEL		2	2	2	2
23. TEXT H. POSITION		-3	-3	-3	-3
24. READ DATA		———	———	———	———

Sound System (Do Not Adjust)

Setting item	B/G	I	D/K	M
10. SIF DET LEVEL	+0	+0	+0	+0
14. SIF BPF BW ADJUST	0 (-)	0 (-)	0 (-)	0 (-)
15. SIF TRAP FO ADJUST	0 (-)	0 (-)	0 (-)	0 (-)
16. SIF TRAP FO ADJUST 2	0 (-)	0 (-)	0 (-)	0 (-)
17. SIF -TRAP	0	0	0	0
18. SIF -BPF	0	0	0	1
22. SIF SW	1	1	1	0

REPLACEMENT OF IC301 (IF V/C DECODER)

- **For the IC301(IF V/C DECODER) of this model, all data are written in the micro-computer. So, write the data in the micro-computer in accordance with the following procedures before starting adjustment.**

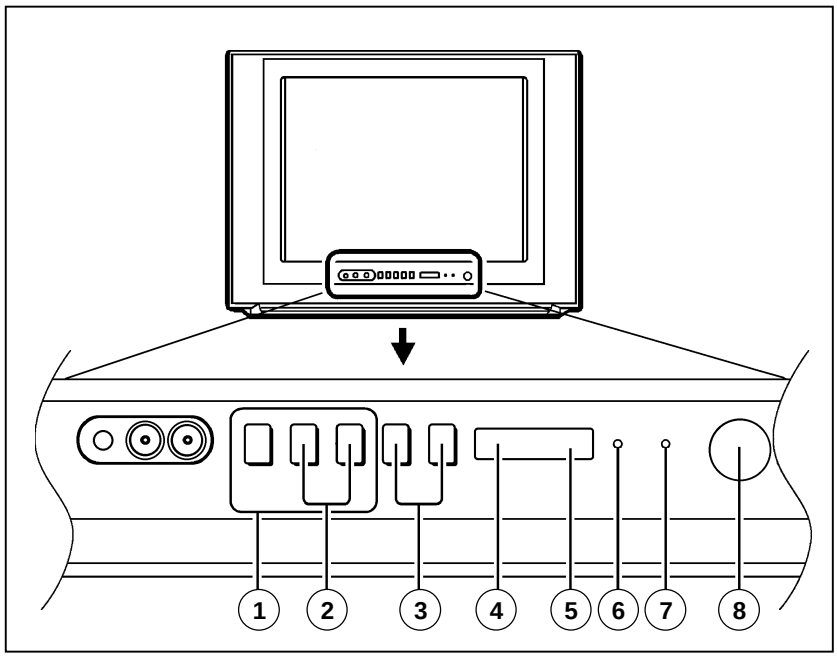
PROCEDURES

(1) Turn the POWER OFF.

(2) Replace the IC301 with a new one.

(3) While pressing MENU button and VOL+ button ON the FRONT CABINET simultaneously, turn the POWER ON. When the POWER is turned ON, the data is written in the micro-computer immediately.

LOCATIONS OF FRONT PANEL BUTTONS AND LAMPS



① MENU buttons
② CHANNEL ∨/∧ buttons (MENU ∨/∧ buttons)
③ VOLUME −/+ buttons (MENU −/+ buttons)
④ ECO sensor
⑤ REMOTE CONTROL sensor
⑥ ON TIMER lamp
⑦ POWER lamp
⑧ MAIN POWER button

SERVICE ADJUSTMENTS

BEFORE STARTING SERVICE ADJUSTMENT

1. **There are 2 way of adjusting this TV: One is with the REMOTE CONTROL UNIT and the other is the conventional method using adjustment parts and components.**
2. **The adjustment with the REMOTE CONTROL UNIT is made on the basis of the initial setting values. The setting values which adjust the screen to its optimum condition may differ from the initial setting values.**
3. Make sure that connection is correctly made to AC power source.
4. Turn on the power of the set and equipment before use, and start the adjustment procedures after waiting at least 30 minutes.
5. Unless otherwise specified, prepare the most suitable reception or input signal for adjustment.
6. **Never touch any adjustment setting value, which are not specified in the list for this adjustment.**
7. Preparation for adjustment
   Unless otherwise specified in the adjustment instructions, preset the following functions with the REMOTE CONTROL UNIT.

User mode position

PICTURE MODE (VSM)	BRIGHT
VNR	OFF
COLOUR / BRIGHT CONT. / SHARP	Refer to VSM PRESET
BLUE BACK	OFF
OFF TIMER	OFF
ECO SENSOR	OFF
AUTO SHUT OFF	OFF

MEASURING INSTRUMENT AND FIXTURES

1. DC voltmeter (or digital voltmeter)
2. Oscilloscope
3. Signal generator (Pattern generator) [PAL / SECAM / NTSC]
4. Remote control unit

ADJUSTMENT ITEMS

Adjustment item	Adjustment item
B1 POWER SUPPLY	DEF. circuit adjustment
FOCUS adjustment	VSM PRESET setting
IF circuit adjustment	PURITY / CONVERGENCE adjustment
V/C (Video / Chroma) circuit adjustment	

BASIC OPERATION OF SERVICE MENU

- **The adjustment using SERVICE MENU**

The following adjustment items use the SERVICE MENU in the series of the adjustment. The adjustments are made on the basis of the initial setting values. The adjustment values which adjust the screen to the optimum condition can be different from the initial setting values. With the SERVICE MENU, various settings can be made, and they are broadly classified in the following items of settings.

1.IF ····· Adjustment of the IF circuits.
2.V/C ····· Adjustment of the VIDEO/CHROMA circuit.
3.DEF ····· Adjustment of the DEFLECTION circuit.
4.VSM PRESET ····· Adjustment of the initial setting values of VSM condition as STANDARD, SOFT and BRIGHT. (VSM : Video Status Memory)
5.PRESET ····· Adjustment of the RF circuit **[Do not adjust]**.
6.TURBO TIMER ····· For quick setting the TIMER count value, adjustable not only by minuets but also by second. **[Should be OFF]**.

- **Key operation of the SERVICE MENU**

[Enter to SERVICE MENU]

Press the **DISPLAY** key and the **PICTURE MODE** key of the REMOTE CONTROL UNIT simultaneously. Then enter the SERVICE MENU mode as shown in Fig.1.

[Exit from SERVICE MENU]

When complete the adjustment work, press the **DISPLAY** key to return to the SERVICE MENU.
And then press the **DISPLAY** key again, return to the normal screen.

[Select from SERVICE MENU]

In SERVICE MENU, press the number (1～6) key of the remote control unit, to select any of the adjustment items.

SERVICE MENU

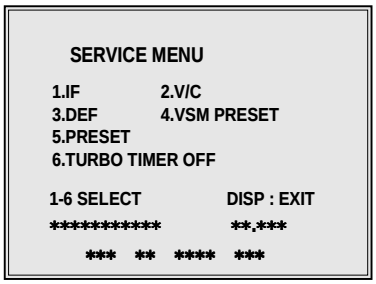
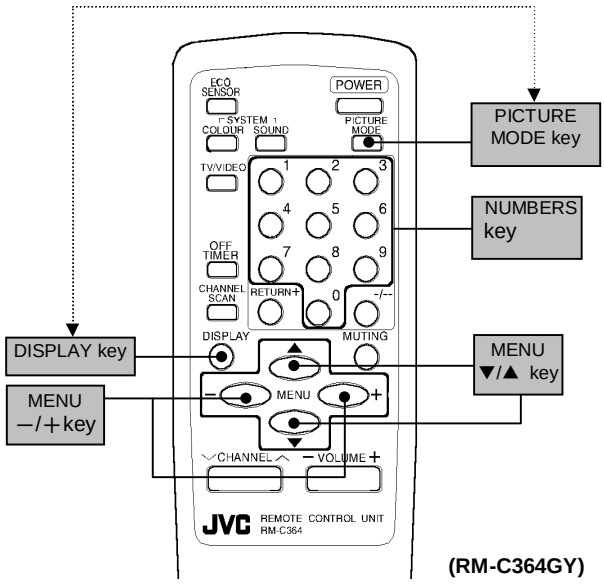


Fig.1

KEY ASSIGNMENT OF REMOTE CONTROL UNIT



(RM-C364GY)

[Method of setting]

1. IF

[1. VCO]

① 1 Key····· Select **1.IF**.

② 1 Key····· Select **1.VCO**

③ The VCO (CW) screen will be displayed a allow mark when the AFC voltage is at a certain level.

④ DISPLAY Key ····· When this is pressed twice, you will return to the **SERVICE MENU**.

[2. DELAY POINT]

① 1 Key····· Select **1.IF**.

② 2 Key····· Select **2.DELAY POINT**.

③ MENU -/+····· Set (adjust) the setting values of the setting items.

④ DISPLAY Key ····· When this is pressed twice, you will return to the **SERVICE MENU**.

2.V/C, 3.DEF and **4.VSM PRESET**

① 2~4Key ····· Select one from **2. V/C, 3. DEF** and **4. VSM PRESET**.

② MENU ▼/▲ Key ····· Select setting items.

③ MENU -/+ ····· Adjust the setting values of the setting items.

④ DISPLAY Key····· When this is pressed, return to the **SERVICE MENU**.

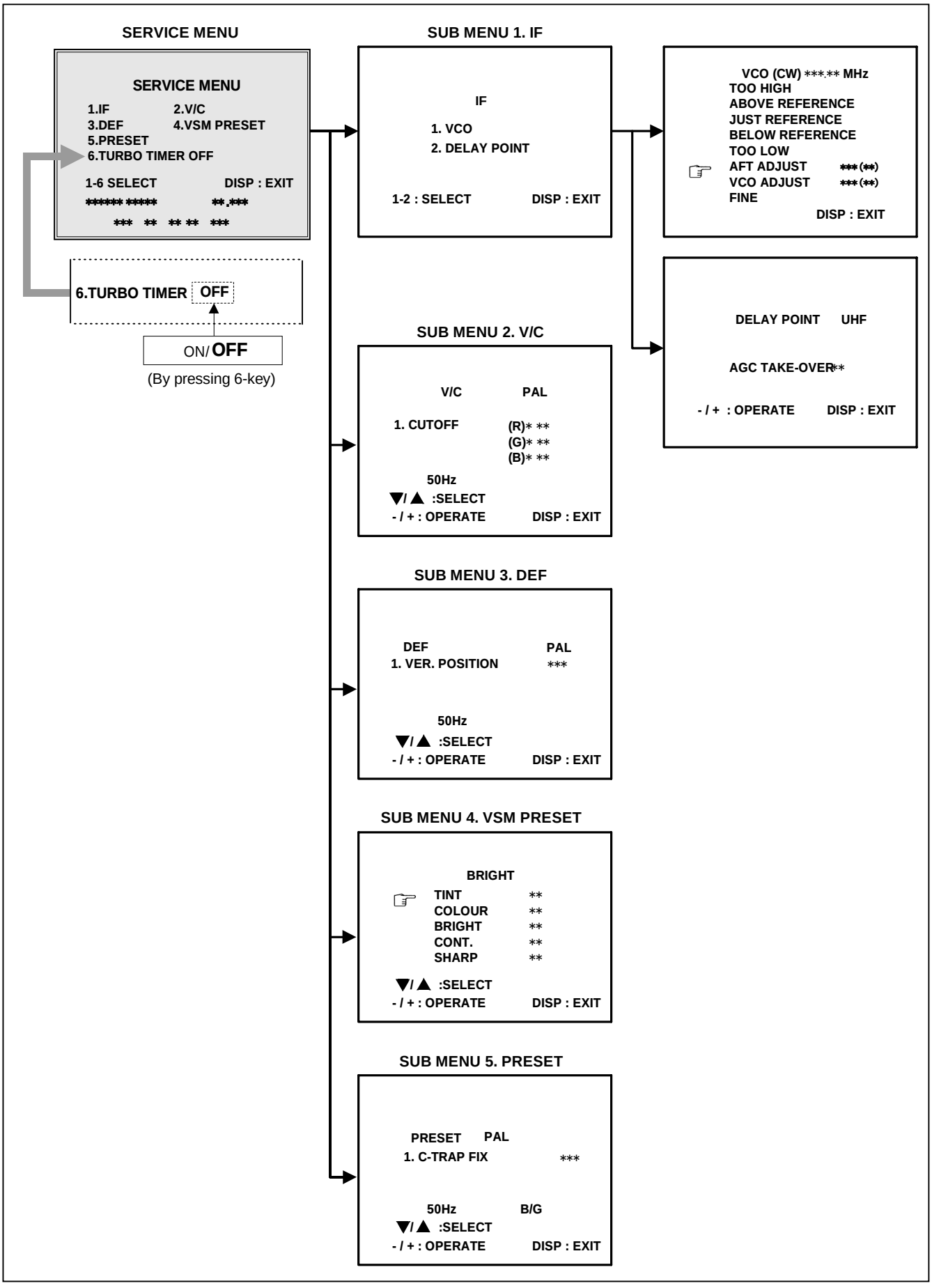
6.TURBO TIMER

① By pressing the 6 key, you can change the ON or OFF (**should be OFF**).

(Should be OFF)

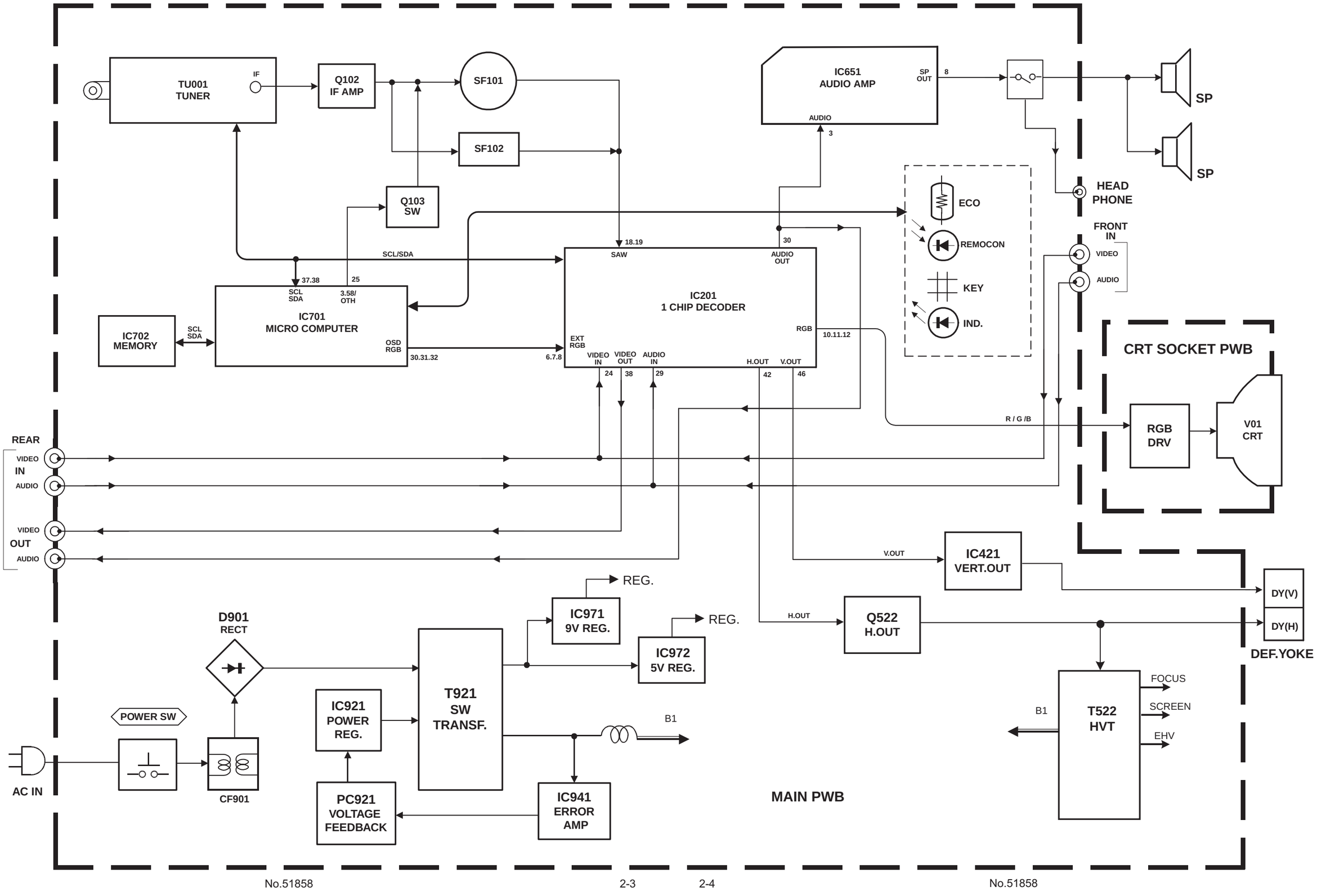
* If it is ON, the timer in TIMER mode changes from 1 minute into 1 sec temporarily.
(It is easier to checks the Operation of TIMER)
If you turn the TV power off, this setting becomes OFF automatically.

SERVICE MENU FLOW CHART



AV-21D10/AV-21DM10
AV-2134EE/AV-21DTG2

BLOCK DIAGRAM



AV-21D10/AV-21DM10
AV-2134EE/AV-21DTG2

CIRCUIT DIAGRAMS *MAIN PWB CIRCUIT DIAGRAMS* [1/2]

MAIN PWB

SCG-1023A-H2
(AV-21DTG2-A)

SCG-1025A-H2
(AV-21DM10)

SCG-1026A-H2
(AV-21D10)

SCG-1027A-H2
(AV-2134EE)

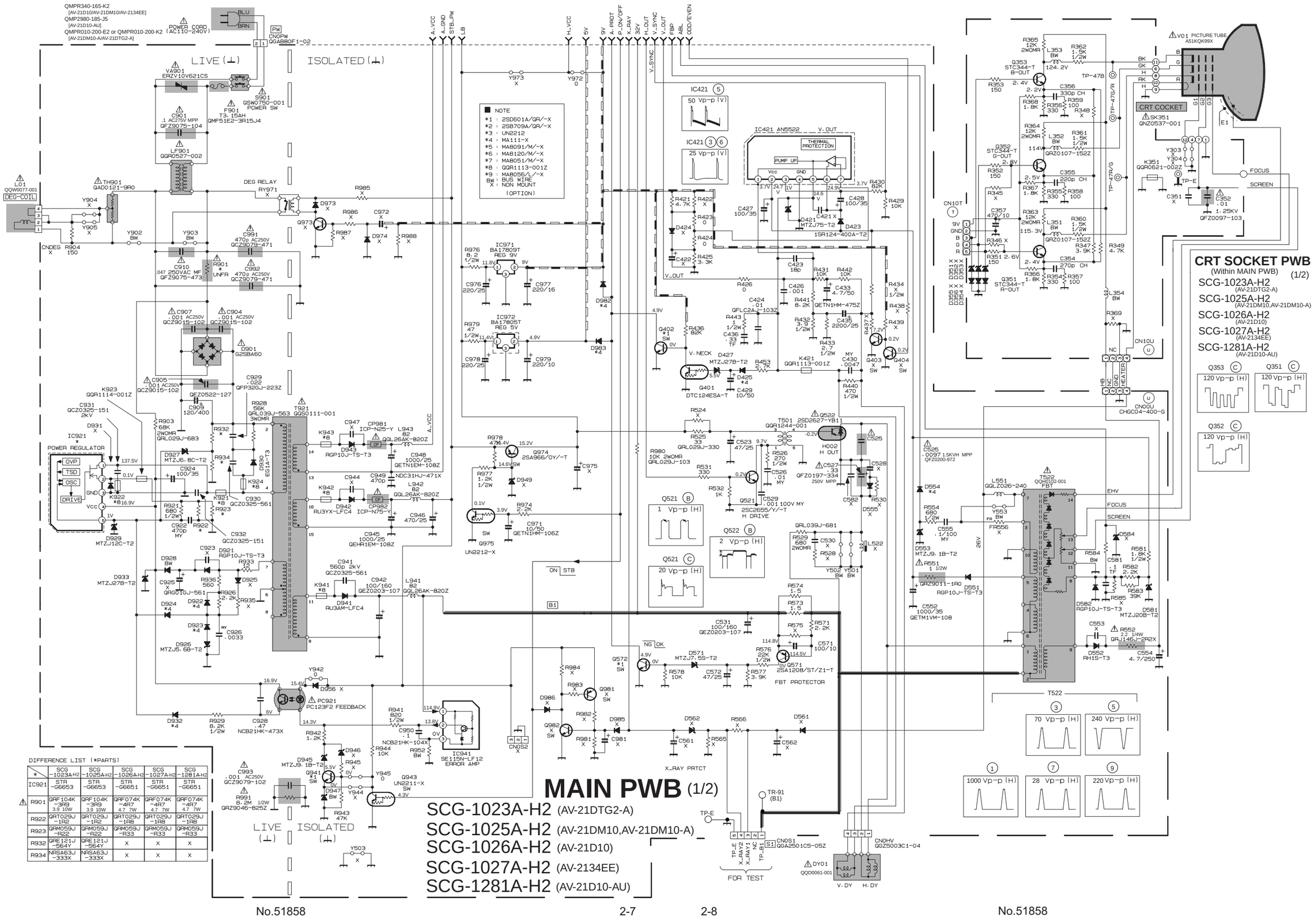
SCG-1281A-H2
(AV-21D10-AU)

NOTE
*1: 2SD601A/QR/-X
*2: 2SB709A/QR/-X
*3: UN2212-X
*4: MA111-X
*5: MTZJ9.1B-T2
*6: MA8120/M/-X
*7: MA8056/M/-X
*8: UN2112-X
*9: QGR0621-002Z
*10: 2SC5083/L-P/-T

DIFFERENCE LIST (*PARTS)

*	SCG-1023A-H2	SCG-1025A-H2	SCG-1027AH2
CF161	X	SFSH4.5MCB	X
Y160	X	BW	X
Q103	X	DTC124EKA-X	X
Q161	X	2SC2412K/GR/-X	X
D102	BW	MA859-T2	BW
R112	NRSA63J-100X	NRSA63J-220X	NRSA63J-100X
R114	X	NRSA63J-472X	X
R115	X	NRSA63J-222X	X
R117	X	NRSA63J-0R0X	X
R118	X	NRSA63J-222X	X
R161	X	NRSA63J-102X	X
R162	X	NRSA63J-122X	X
R163	X	NRSA63J-222X	X
R164	X	NRSA63J-221X	X
R165	X	NRSA63J-220X	X
R166	X	NRSA63J-821X	X
C109	X	NCB31HK-472X	X
C161	X	NCB31HK-103X	X
C164	X	NCB31HK-103X	X
C165	X	NCB31HK-103X	X
C166	X	NCB31HK-104X	X
IC701	MN18732 87JF	MN18732 87JF	MN18732 87JE

MAIN PWB CIRCUIT DIAGRAM [2/2]



MAIN PWB (1/2)

SCG-1023A-H2 (AV-21DTG2-A)
SCG-1025A-H2 (AV-21DM10,AV-21DM10-A)
SCG-1026A-H2 (AV-21D10)
SCG-1027A-H2 (AV-2134EE)
SCG-1281A-H2 (AV-21D10-AU)